

Figure 1

1 2 3

HK'5 188 R L T K A M P R R H K D M D V D I L A L Y N D I V G T M M T C A Y D D P Y C E V G 227  
HK'1 188 L L N K A I K K R G D Y D A N I V A V V N D I V G T M M T C G Y D D Q H C E V G 227  
HK'2 188 L I R K A I Q R R G D F D I D I V A V V N D I V G T M M T C G Y D D H N C E I G 227  
HK'3 201 L L R D A I R R Q G A Y N I D V V A V V N D I V G T M M G C E P G V R P C E V G 240  
HK4p 1

Figure 2a

HK 5	228	V	I	I	G	T	G	T	N	A	C	Y	M	E	D	M	S	N	I	D	L	V	E	G	D	E	G	R	M	C	I	N	T	E	V	G	A	F	G	D	267
HK 1	228	L	I	I	G	T	G	T	N	A	C	Y	M	E	E	L	R	H	I	D	L	V	E	G	D	E	G	R	M	C	I	N	T	E	V	G	A	F	G	D	267
HK 2	228	L	I	V	G	T	G	S	N	A	C	Y	M	E	E	M	R	H	I	D	M	V	E	G	D	E	G	R	M	C	I	N	M	E	V	G	A	F	G	D	267
HK 3	241	L	V	V	D	I	G	T	N	A	C	Y	M	E	E	A	R	H	V	A	V	L	D	E	D	R	G	R	V	C	V	S	V	E	V	G	S	L	S	D	286
HK 4p	1																													0											

HK 5	268	G	A	L	E	D	I	R	T	E	F	D	R	E	L	D	L	G	S	L	N	P	G	K	Q	L	F	E	K	M	I	S	G	L	Y	L	G	E	L	V	R	307
HK 1	268	G	S	L	E	D	I	R	T	E	F	D	R	E	I	D	R	G	S	L	N	P	G	K	Q	L	F	E	K	M	I	S	G	M	Y	L	G	E	L	V	R	307
HK 2	268	G	S	L	N	D	I	R	T	E	F	D	Q	E	I	D	M	G	S	L	N	P	G	K	Q	L	F	E	K	M	I	S	G	M	Y	M	G	E	L	V	R	307
HK 3	281	G	A	L	G	P	V	L	T	T	F	D	H	T	L	D	H	E	S	L	N	P	G	A	Q	R	F	E	K	M	I	G	G	L	Y	L	G	E	L	V	R	320
HK 4p	1																													0												

HK 5	308	L	I	L	K	M	A	K	A	G	L	F	G	G	E	K	S	S	A	L	H	T	K	G	K	I	E	T	R	H	V	A	A	M	E	K	Y	K	E	347		
HK 1	308	L	I	L	V	K	M	A	K	E	G	L	F	E	G	R	I	T	P	E	L	L	T	R	G	K	F	N	T	S	D	V	S	A	I	E	K	N	K	E	347	
HK 2	308	L	I	L	V	K	M	A	K	E	E	L	F	G	G	K	L	S	P	E	L	L	N	T	G	R	F	E	T	K	D	I	S	D	I	E	G	E	K	D	347	
HK 3	321	L	V	L	A	H	L	A	R	C	G	V	L	F	G	G	C	T	S	P	A	L	L	S	Q	G	S	I	L	L	E	H	V	A	E	M	E	D	P	S	T	366
HK 4p	1																													0												

HK 5	348	G	L	A	N	T	R	E	I	L	V	D	L	G	L	E	P	S	E	A	D	C	I	A	V	Q	H	V	C	T	I	V	S	F	R	S	A	N	L	C	A	387
HK 1	348	G	L	H	N	A	K	E	I	L	T	R	L	G	V	E	P	S	D	D	C	V	S	V	Q	H	V	C	T	I	V	S	F	R	S	A	N	L	V	A	387	
HK 2	348	G	I	R	K	A	R	E	V	L	M	R	L	G	L	D	P	T	Q	E	D	C	V	A	T	H	R	I	C	Q	I	V	S	T	R	S	A	S	L	C	A	387
HK 3	361	G	A	A	R	V	H	A	I	L	Q	D	L	G	L	S	P	G	A	S	D	V	E	L	V	Q	H	V	C	A	A	V	C	T	R	A	A	Q	L	C	A	406
HK 4p	1																													0												

HK 5	388	A	A	L	A	A	I	L	T	R	L	R	E	N	K	K	V	E	R	L	R	T	T	V	G	M	D	G	T	L	Y	K	I	H	P	Q	Y	P	K	R	L	427
HK 1	388	A	T	L	G	A	I	L	N	R	L	R	D	N	K	G	T	P	R	L	R	T	T	V	G	V	D	G	S	L	Y	K	I	H	P	Q	Y	S	R	R	F	427
HK 2	388	A	T	L	A	A	V	L	Q	R	I	K	E	N	K	G	E	E	R	L	R	S	T	I	G	V	D	G	S	V	Y	K	I	H	P	H	F	A	K	R	L	427
HK 3	401	A	A	L	A	A	V	L	S	C	L	Q	H	S	R	E	Q	Q	T	L	Q	V	A	V	A	T	G	G	R	V	C	E	R	H	P	R	F	C	S	V	L	446
HK 4p	1																													0												

HK 5	428	H	K	V	V	R	K	L	V	P	S	C	D	V	R	F	L	L	S	E	S	G	S	T	K	G	A	A	M	V	I	A	V	A	S	R	V	Q	A	Q	R	467	
HK 1	428	H	K	T	L	R	R	L	V	P	D	S	D	V	R	F	L	L	S	E	S	G	S	G	K	G	A	A	M	V	I	A	V	A	Y	R	L	A	E	Q	H	467	
HK 2	428	H	K	I	V	R	R	L	V	P	G	C	D	V	R	F	L	R	S	E	D	G	S	G	K	G	A	A	M	V	I	A	V	A	Y	R	L	A	D	Q	H	467	
HK 3	441	Q	G	T	V	M	L	L	A	P	E	C	D	V	S	L	I	P	S	V	D	G	G	R	G	V	A	M	V	I	A	V	A	A	R	L	A	A	H	R	486		
HK 4p	1																													0													
																														M	L	D	D	R	A	R	M	E	A	A	K	K	12

Figure 2b

BEST AVAILABLE COPY

HK 5	468	K	Q	I	D	R	V	L	A	L	F	Q	L	T	R	E	Q	L	V	D	V	Q	A	K	M	R	A	E	L	E	Y	G	L	K	K	S	H	G	L	A	507	
HK 1	468	R	Q	I	E	E	T	L	A	H	F	H	L	T	K	D	M	L	L	E	V	K	R	M	R	A	E	M	E	L	G	L	R	Q	T	H	N	N	A	507		
HK 2	468	R	A	R	Q	K	T	L	E	H	L	Q	L	S	H	D	Q	L	L	E	V	K	R	R	M	K	V	E	M	E	R	G	L	S	K	E	T	H	A	S	A	507
HK 3	481	R	L	L	E	E	T	L	A	P	F	R	L	N	H	D	Q	L	A	A	V	Q	A	Q	M	R	K	A	M	A	K	G	L	R	G	-	-	-	E	A	S	517
HK 4p	14	E	K	V	E	Q	I	L	A	E	F	Q	L	Q	E	E	D	L	K	K	V	M	R	R	M	Q	K	E	M	D	R	G	L	R	L	E	T	H	E	E	A	53

HK 5	508	T	V	R	M	L	P	T	Y	V	C	G	L	P	D	G	T	E	K	G	K	F	L	A	L	D	L	G	G	T	N	F	R	V	L	L	V	K	I	E	S	547
HK 1	508	V	V	K	M	L	P	S	F	V	R	R	T	P	D	G	T	E	N	G	D	F	L	A	L	D	L	G	G	T	N	F	R	V	L	L	V	K	I	E	S	547
HK 2	508	P	V	K	M	L	P	T	Y	V	C	A	T	P	D	G	T	E	K	G	D	F	L	A	L	D	L	G	G	T	N	F	R	V	L	L	V	R	V	R	N	547
HK 3	518	S	L	R	M	L	P	T	F	V	R	A	T	P	D	G	S	E	R	G	D	F	L	A	L	D	L	G	G	T	N	F	R	V	L	L	V	R	V	T	I	557
HK 4p	54	S	V	K	M	L	P	T	Y	V	R	S	T	P	E	G	S	E	V	G	D	F	L	S	L	D	L	G	G	T	N	F	R	V	M	L	V	K	V	G	E	93

HK 5	548	G	R	-	R	-	S	V	R	M	Y	N	K	I	F	A	I	P	L	E	I	M	Q	G	T	G	E	E	L	F	D	H	I	V	Q	C	I	A	D	F	584	
HK 1	548	G	K	R	-	-	T	V	E	M	H	N	K	I	Y	A	I	P	I	E	I	M	Q	G	T	G	E	E	L	F	D	H	I	V	S	C	I	S	D	F	585	
HK 2	548	G	K	W	G	-	G	V	E	M	H	N	K	I	Y	A	I	P	Q	E	V	M	H	G	I	G	D	E	L	F	D	H	I	V	Q	C	I	A	D	F	585	
HK 3	558	G	-	-	-	-	V	Q	I	T	S	E	I	Y	S	I	P	E	T	V	A	Q	G	S	G	Q	Q	L	F	D	H	I	V	D	C	I	V	D	F	581		
HK 4p	94	G	E	E	G	Q	W	S	V	K	T	K	H	Q	M	Y	S	I	P	E	D	A	M	T	G	T	A	E	M	L	F	D	Y	I	S	E	C	I	S	D	F	123

HK 5	585	L	D	Y	M	G	L	K	G	A	S	L	P	L	G	F	T	F	S	F	P	C	R	Q	M	S	I	D	K	G	T	L	I	G	V	T	K	G	F	K	A	624
HK 1	585	L	D	Y	M	G	I	K	G	P	R	M	P	L	G	F	T	F	S	F	P	C	Q	Q	T	S	L	D	A	G	I	L	I	T	V	T	K	G	F	K	A	625
HK 2	585	L	E	Y	M	G	M	K	G	V	S	L	P	L	G	F	T	F	S	F	P	C	Q	Q	N	S	L	D	E	S	I	L	L	K	V	T	K	G	F	K	A	625
HK 3	582	Q	Q	K	Q	G	L	S	G	Q	S	L	P	L	G	F	T	F	S	F	P	C	R	Q	L	G	L	D	Q	G	I	L	L	N	V	T	K	G	F	K	A	631
HK 4p	134	L	D	K	H	Q	M	K	H	K	L	P	L	G	F	T	F	S	F	P	V	R	H	E	D	I	D	K	G	I	L	L	N	V	T	K	G	F	K	A	173	

HK 5	625	T	D	C	E	G	E	D	V	V	D	M	L	R	E	A	I	K	R	R	N	E	F	D	L	D	I	V	A	V	V	N	D	I	V	G	T	M	M	T	C	664
HK 1	626	T	D	C	V	G	H	D	V	V	I	L	L	R	D	A	I	K	R	R	E	E	F	D	L	D	V	V	A	V	V	N	D	I	V	G	T	M	M	T	C	665
HK 2	626	S	G	C	E	G	E	D	V	V	I	L	L	K	E	A	I	H	R	R	E	E	F	D	L	D	V	V	A	V	V	N	D	I	V	G	T	M	M	T	C	665
HK 3	632	S	D	C	E	G	Q	D	V	V	S	L	L	R	E	A	I	T	R	R	Q	A	V	E	L	N	V	V	A	I	V	N	D	I	V	G	T	M	M	S	C	671
HK 4p	174	S	G	A	E	G	N	N	V	V	G	L	L	R	D	A	I	K	R	R	G	D	F	E	M	D	V	V	A	M	V	N	D	I	V	A	T	M	I	S	C	213

HK 5	665	G	Y	E	D	P	N	C	E	I	G	L	I	A	G	T	G	S	N	M	C	Y	M	E	D	M	R	N	I	E	M	V	E	G	G	E	G	K	M	C	I	704
HK 1	666	A	Y	E	E	P	T	C	E	V	G	L	I	V	G	T	G	S	N	A	C	Y	M	E	E	M	K	N	V	E	M	V	E	G	D	Q	G	Q	M	C	I	705
HK 2	666	G	F	E	D	P	H	C	E	V	G	L	I	V	G	T	G	S	N	A	C	Y	M	E	E	M	R	N	V	E	L	V	E	G	E	E	G	R	M	C	V	705
HK 3	672	G	Y	E	D	P	R	C	E	I	G	L	I	V	G	T	G	T	N	A	C	Y	M	E	E	L	R	N	V	A	G	V	P	G	D	S	G	R	M	C	I	711
HK 4p	214	Y	T	E	D	H	Q	C	E	V	G	M	I	V	G	T	G	C	N	A	C	Y	M	E	E	M	Q	N	V	E	L	V	E	G	D	E	G	R	M	C	V	253

Figure 2c

HK 5 705 NT EWG GFGDNGC I D D I R T R Y D T E V D E G S L N P G K Q R Y E K M T 744  
 HK 1 706 N M E V G A F G D N G C L D D I R T H Y D R L V N E Y S L N A G K Q R Y E K M I 745  
 HK 2 706 N M E V G A F G D N G C L D D F R T E F D V A V D E L S L N P G K Q R F E K M I 745  
 HK 3 712 N M E V G A F G D D G S L A M L S T R F D A S V D Q A S I N P G K Q R F E K M I 751  
 HK 4p 254 NT EWG A F G D S G E L D E F L L E Y D R L V D E S S A N P G Q Q L Y E K L I 203

HK 5 745 S G M Y L G E I V R Q I L I D L T K Q G L L F R G Q I S E R L R T R G I F E T K 784  
 HK 1 746 S G M Y L G E I V R N I L I D F T K K G F L F R G Q I S E T M K T R G I F E T K 785  
 HK 2 746 S G M Y L G E I V R N I L I D F T K R G L L F R G R I S E R L K T R G I F E T K 785  
 HK 3 752 S G M Y L G E I V R H I L L H L T S L G V L F R G Q Q I Q R L Q T R D I F K T K 791  
 HK 4p 294 G G K Y M G E L V R L V L L R L V D E N L L F H G E A S E Q L R T R G A F E T R 333

HK 5 785 F L S Q I E S D R L A L L Q V R R I L Q Q L G L D S T C E D S I V V K E V C G A 824  
 HK 1 786 F L S Q I E S D R L A L L Q V R A I L Q Q L G L N S T C D D S I L V K T V C G V 825  
 HK 2 786 F L S Q I E S D C L A L L Q V R A I L Q H L G L E S T C D D S I I V K E V C T V 825  
 HK 3 792 F L S E I E S D S L A L R Q V R A I L E D L G L P L T S D D A L M V L E V C Q A 831  
 HK 4p 334 F V S Q V E S D T G D R K Q I Y N I L S T L G L R P S T T D C D I V R R A C E S 373

HK 5 825 V S R R A A Q L C G A G L A A I V E K R R E D Q G L E H L R I T V G V D G I L Y 864  
 HK 1 826 V S R R A A Q L C G A G M A A V V D K I R E N R G L D R L N V T V G V D G I L Y 865  
 HK 2 826 V A R R A A Q L C G A G M A A V V D R I R E N R G L D A L K V T V G V D G I L Y 865  
 HK 3 832 V S Q R A A Q L C G A G V A A V V E K I R G N R G L E E L A V S V G V D G I L Y 871  
 HK 4p 374 V S T R A A H M C S A G L A G V I N E M R E S R S E D V M R I T V G V D G S V Y 413

HK 5 865 K L H P H F S R I L Q E I V K E L A P R C D V I F M L S E D G S G K G A A L I T 904  
 HK 1 866 K L H P H F S R I M H Q I V K E L S P K C N V S F L L S E D G S G K G A A L I T 905  
 HK 2 866 K L H P H F A K V M H E I V K D L A P K C D V S F L Q S E D G S G K G A A L I T 905  
 HK 3 872 K L H P R F S S L V A A I V R E L A P R C V V I F L Q S E D G S G K G A A L V I 911  
 HK 4p 414 K L H P S F K E R F H A S V R R L T P S C E I T F I E S E E G S G R G A A L V S 453

HK 5 905 A V A K R L Q Q A Q K E N 917  
 HK 1 906 A V G V R L R T E A S S 917  
 HK 2 906 A V A C R I R E A G Q R 917  
 HK 3 912 A V A C R L A Q L T R V 923  
 HK 4p 454 A V A C K K A C M L G Q 465

Figure 2d

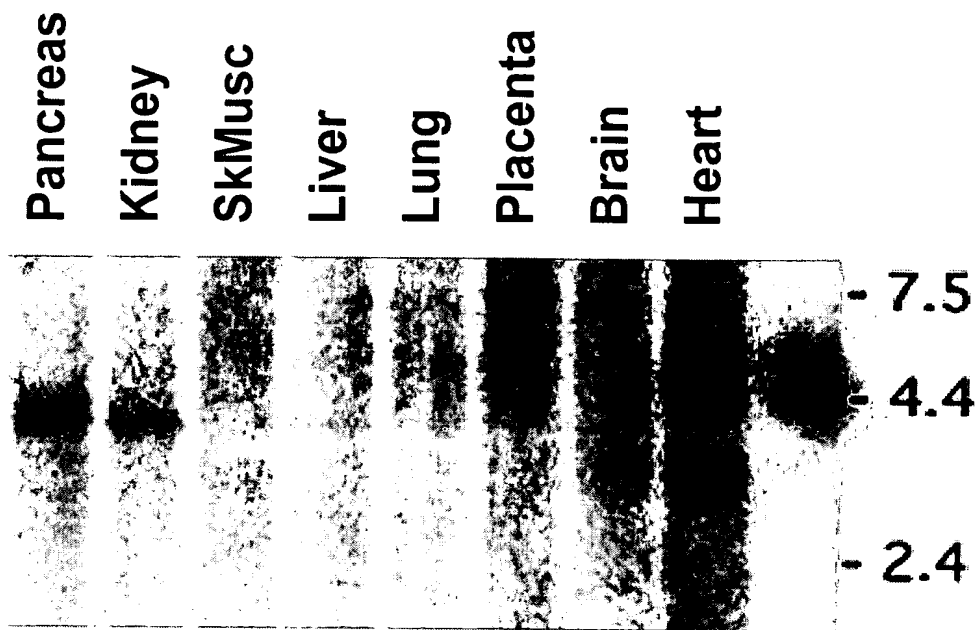
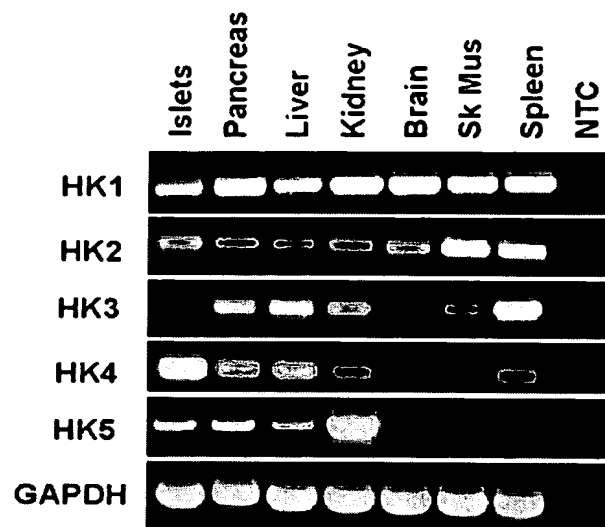


Figure 3

**Figure 4**

**Figure 5**



Insulin

HK5

merge



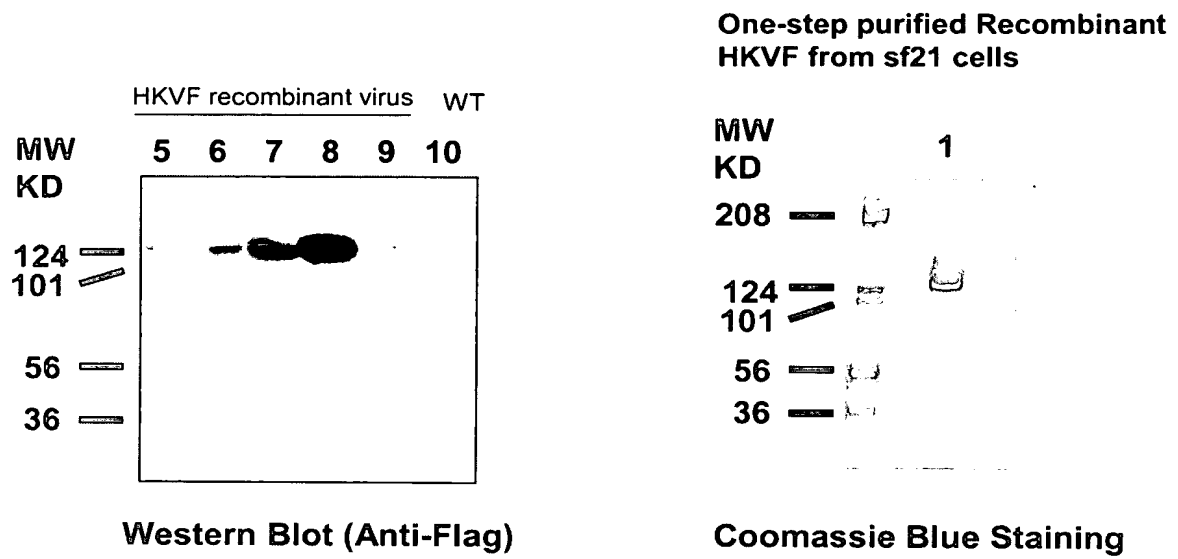


Figure 6a.

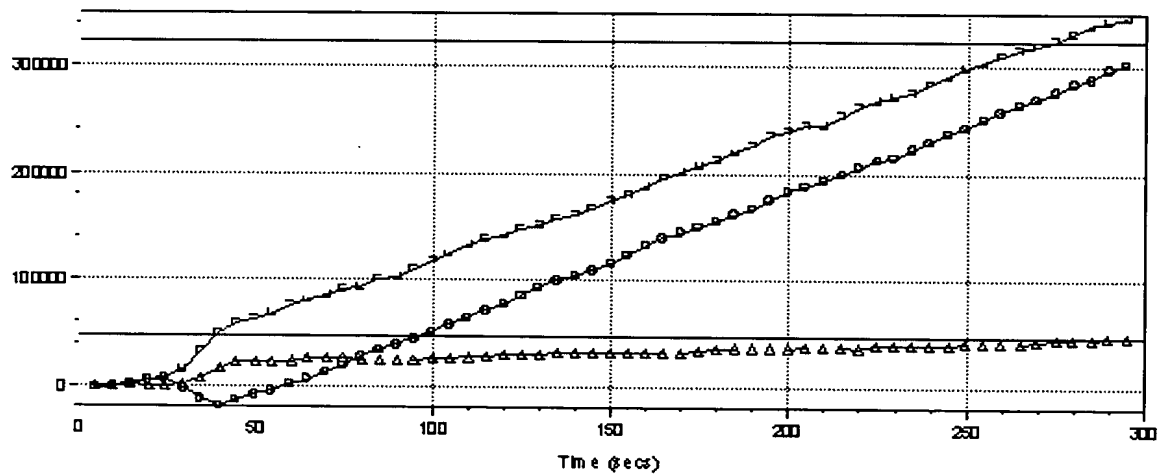


Figure 6 b



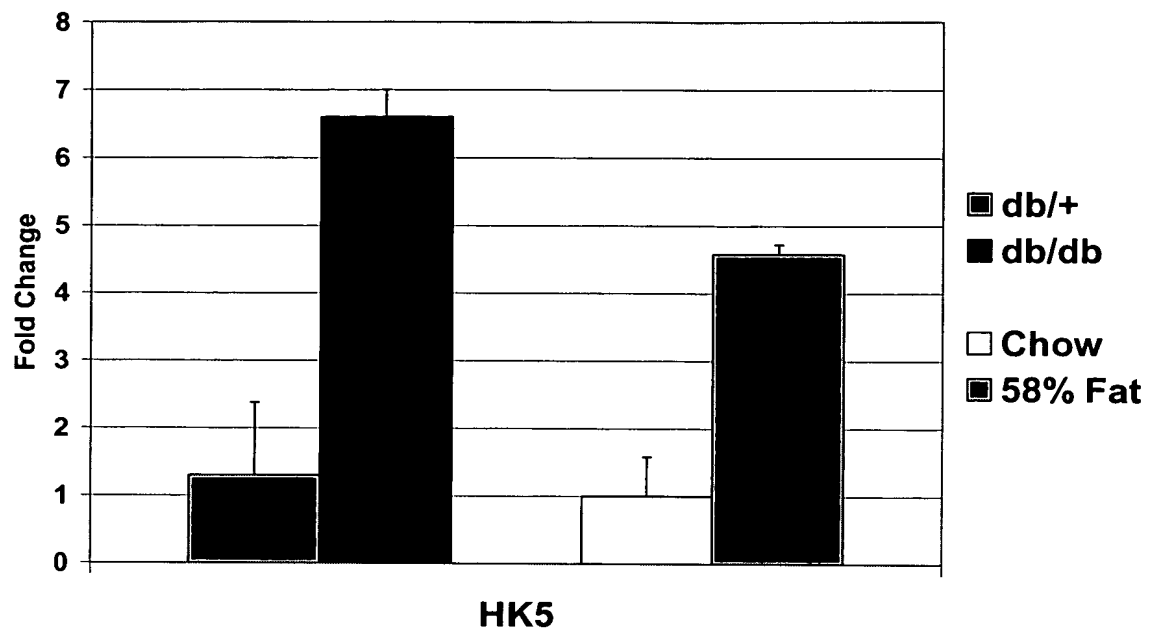
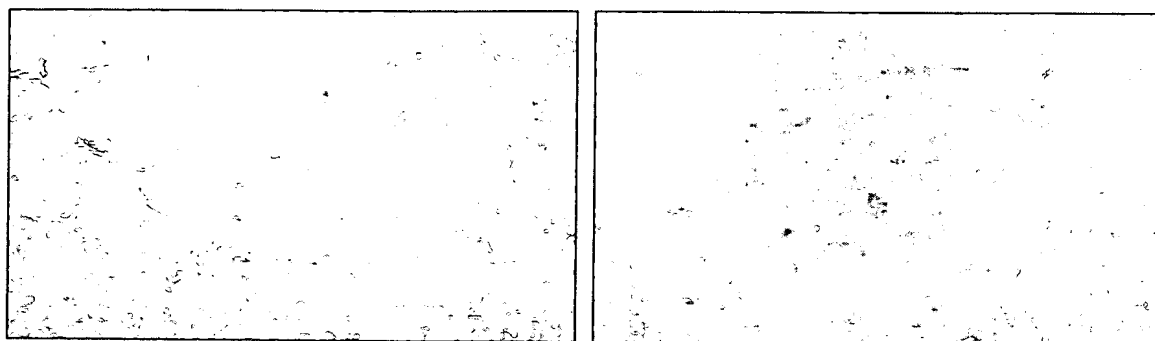


Figure 8



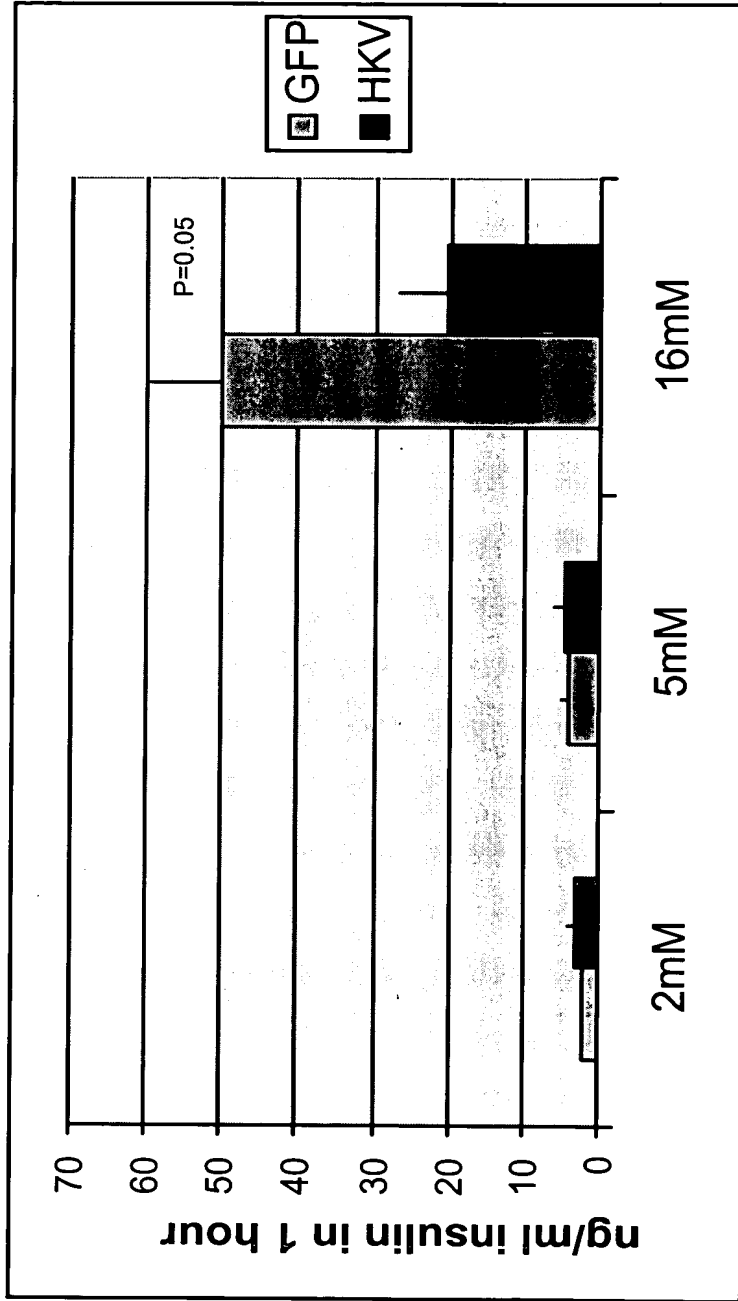
Db/+

Db/Db

Anti mouse HKV

Figure 9

Figure 10



Infected islets      HKV infected  
293 cells

GFP HKV +ve control

